DKRUSE.

#11 BP OIPE

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/453,387A

DATE: 07/25/2001 TIME: 15:26:46

Input Set : A:\Uco-956.app

Output Set: N:\CRF3\07252001\I453387A.raw

3	<110)> AI	PLIC	CANT	: Wi	lkins	s, Tl	nea A	Α.								
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)> F															
		D> Ct									/453,	, 3872	A				
		l> Ct							-12-	02							
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		GTÀ	Arg	ser	Pro 5	Cys	Cys	GIU	гуѕ		нтѕ	IIII	ASII	гуу	Gly 15	Ald	
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36	пр	1111	гуу	20	GIU	ASP	GIII	Arg	25	тте	ASII	тйт	TIE	30	Val	птр	
	aat	~~~	aaa		taa	cat	tcc	ctc		222	act	act	aaa		ctt	202	202
															Leu		202
40	Gry	Giu	35	Суз	111	mrg	501	40	110	цуз	111.α	mu	45	пси	БСи	111 9	
	tat	aat		agt	tac	aga	tta		taa	ata	aac	tac		agg	cct	gat	250
															Pro		250
44	0,10	50			010	***** 9	55	9				60		9			
	ctt		aσa	gga	aat	ttc		gaa	σaa	σaa	σat		ctt	atc	atc	aaq	298
		_	_					_	_	_	_				Ile	_	
48	65	1	,			70					75					80	
		cac	agt	tta	ctt	qqa	aac	aaa'	tgg	tca	ttg	att	gct	gga	aga	tta	346
			_												Arg		
52					85	-		-	-	90				_	95		
54	cca	gga	aga	aca	gat	aat	gag	ata	aag	aac	tac	tgg	aac	aca	cac	atc	394
55	Pro	Gly	Arg	Thr	Asp	Asn	Glu	Ile	Lys	Asn	Tyr	Trp	Asn	Thr	His	Ile	
56		-		100					105					110			
58	aaa	aga	aag	ctt	ata	agc	aga	gga	att	gat	cca	caa	act	cat	cgt	cct	442
59	Lys	Arg	Lys	Leu	Ile	Ser	Arg	Gly	Ile	Asp	Pro	Gln	Thr	His	Arg	Pro	
60			115					120					125				
62	ctc	aat	caa	acg	gcc	aat	acc	aac	aca	gţc	aca	gcc	ccc	acc	gaa	ttg	490
63	Leu	Asn	Gln	Thr	Ala	Asn	Thr	Asn	Thr	Val	Thr	Ala	Pro	Thr	Glu	Leu	
64		130					1:35					140					
66	gat	ttc	aga												atc		538
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67 Asp Phe Arg Asn Ser Pro Thr Ser Val Ser Lys Ser Ser Ser Ile Lys

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	68	145					150					155					160	
		aac																586
	71	Asn	Pro	Ser	Leu	Asp	Phe	Asn	Tyr	Asn	Glu	Phe	Gln	Phe	Lys	Ser	Asn	
	72					165					170					175		
		aca																634
	75	Thr	Asp	Ser	Leu	Glu	Glu	Pro			Thr	Ala	Ser	Ser	Gly	Met	Thr	
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		aca																682
		Thr	Asp		Glu	Gln	Gln	Glu		Leu	His	Lys	Lys		GIn	Tyr	GLY	
	80			195					200					205				=0.0
		ccg																730
		Pro		Asn	GLY	Gln	Asp		Asn	Leu	GLu	Leu		тте	сту	тте	vaı	
	84		210					215					220					770
																	aaa.	778
		Ser	Ala	Asp	Ser	Ser		Val	Ser	Asn			Ser	Ата	GIU	Ser		
		225					230	1	1 1			235					240	00.0
		cca																826
		Pro	Lys	Val	Asp		Asn	Asn	Phe	GIn		Leu	GIU	Gin	Ата		vaı	
	92					245			1		250		4.4.4			255		074
		gct																874
		Ala	гÀг	Ala	260	Cys	ьеи	Cys	-	265	ьeu	СТУ	rne	СтУ	270	ser	GIU	
	96	att	+ ~+	200		+ ~+	a aa	22+			+ < >	2 2 t	aac	t t c		aat	tat	922
		Ile																222
	100		Cys	275		Суз	GIII	non	280		Der	АЗП	Сту	285		Der	ı yı	
		, 2 tgt	aga			r dat	tca	tac			+++	ttct	tett			attt	•+	973
		Cys							99-							- 5		
>	104	-	290			[.		295	,									
		tag	gaga	taa	atta	atgo	tt a			a aa	a						•	1006
) <21																
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			2> T	YPE:	PRT	1	sypi	um h	irsu	tum								
	112 114	<21 2 <21 4 <40	2> T 3> C 0> S	YPE: RGAN EQUE	PRI ISM: NCE:	Gos 2												
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	112 114 115 116	<pre>1 <21 2 <21 4 <40 5 Met 5 1 7 Trp</pre>	2> T 3> C 0> S Gly	YPE: RGAN EQUE Arg	PRT VISM: NCE: Ser Glu	Gos 2 Pro 5	Cys	: Cys	Glu	Lys Leu	10 Ile				Arc	15 y Val	_	
	112 114 115 116 117	2 <21 2 <21 4 <40 5 Met 5 1 7 Trp	2> T 3> C 0> S Gly	YPE: RGAN EQUE Arg	PRT VISM: SNCE: Ser Glu	Gos 2 Pro 5 Glu	Cys Asp	Cys	Glu Arg	Lys Leu 25	10 Ile	Asn	ı Tyr	: Ile	Arg	15 y Val)	His	
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	112 114 115 116 117 118 119	<pre>1 <21 2 <21 4 <40 5 Met 5</pre>	2> 1 3> 0 0> 5 Gly Thr	YPE: PRGAN EQUE Arg Lys Gly 35	PRI VISM: SNCE: Ser Glu 20 Cys	Gos 2 Pro 5 Glu	Cys Asp Arg	Cys Gln Ser	Glu Arg Leu 40	Lys Leu 25 Pro	10 Ille Lys	Asn Ala	ı Tyr ı Ala	: Ile Gly 45	Arg 30	19 y Val) ı Lei	His Arg	
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	112 114 115 116 117 118 120 121 122	<pre>1 <21 2 <21 4 <40 5 Met 5</pre>	2> T 3> C 0> S Gly Thr Glu Gly 50	PYPE: PRGAN EQUE Arg Lys Gly 35 Lys	PRI IISM: INCE: Ser 20 Cys Ser	Gos 2 Pro 5 Glu Trp	Cys Asp Arg Arg	Cys Glm Ser Leu 55	Glu Arg Leu 40 Arg	Lys Leu 25 Pro	10 Ile Lys	Asn Ala Asn	Tyr Ala Tyr 60	Gly 45 Leu	Arg 30 Leu Arg	15 y Val) ı Lei y Pro	His Arg	
	112 114 115 116 117 118 119 120 121 122 123	2 <21 2 <21 4 <40 5 Met 5 1 7 Trp 8 Gly 0 Cys 2 Leu	2> T 3> C 0> S Gly Thr Glu Gly 50	PYPE: PRGAN EQUE Arg Lys Gly 35 Lys	PRI IISM: INCE: Ser 20 Cys Ser	Gos 2 Pro 5 Glu Trp	Cys Asp Arc Arc	Cys Glm Ser Leu 55 Thr	Glu Arg Leu 40 Arg	Lys Leu 25 Pro	10 Ile Lys	Asn Ala Asn Asp	Tyr Ala Tyr 60 Glu	Gly 45 Leu	Arg 30 Leu Arg	15 y Val) ı Lei y Pro	His Arg Arg Asp	
	112 114 115 116 117 118 120 121 122 123	2 <21 2 <21 4 <40 5 Met 5 1 7 Trp 8 Gly 1 Cys 2 Leu 4 65	2> T 3> C 0> S Gly Thr Glu 50 Lys	PYPE: PRGAN EQUE Arg Lys Gly 35 Lys Arg	PRI IISM: INCE: Ser 20 7 Cys 8 Ser I Gly	Gos 2 Pro 5 Glu 6 Trp Cys	Cys Asp Arc Arc Phe	Cys Glm GSer Leu 55 Thr	Glu Arg Leu 40 Arg	Lys Leu 25 Pro Trp Glu	10 Ile	Asn Ala Asn Asp	Tyr Ala Tyr 60 Glu	Gly 45 Leu	Arc 30 Leu Arc	15 y Val) Leu J Pro	His Arg Arg Asp Lys 80	
	112 114 115 116 117 118 120 121 122 123 124	2 <21 2 <21 4 <40 5 Met 5 1 7 Trp 8 Gly 1 Cys 2 Leu 1 65 5 Leu	2> T 3> C 0> S Gly Thr Glu 50 Lys	PYPE: PRGAN EQUE Arg Lys Gly 35 Lys Arg	PRI IISM: INCE: Ser 20 7 Cys 8 Ser I Gly	Gos 2 Pro 5 Glu 6 Trp Cys Asn	Cys Asp Arc Arc Arc GArc GARC GARC GARC GARC GARC GARC GARC GARC	Cys Glm GSer Leu 55 Thr	Glu Arg Leu 40 Arg	Lys Leu 25 Pro Trp Glu	10 Ile	Asn Ala Asn Asp 75	Tyr Ala Tyr 60 Glu	Gly 45 Leu	Arc 30 Leu Arc	15 Val	His Arg Asp E Lys 80 Leu	
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	112 114 115 116 117 120 121 122 123 124 125 126 127 128	2 <21 2 <21 3 <40 5 Met 5 1 7 Trp 8 Gly 1 Cys 2 B Leu 1 65 5 Leu 5 Pro	2> Tage of the second s	PYPE: PRGAN EEQUE Arg Lys Gly 35 Lys Arg	PRTUISM: UISM: UIS	Gos 2 Pro 5 Glu 6 Trp Cys Asn Leu 85	Asp Arg Arg Arg Gly Asr	S Cys Ser Ser Thr Asn	Arg Leu 40 Arg Glu Lys	Lys Leu 25 Pro Trp Glu Trp Lys 105	10 Ile	Asn Ala Asn Asp 75 Leu	Tyr Ala Tyr 60 Glu Ile	Gly 455 Leu Leu Ala	Arg Jen Arg Ile Gly Thi	15 Val	His Arg Asp E Lys 80 Leu	

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130			115					120					125				
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	_	Phe	Arg	Asn	Ser		Thr	Ser	Val	Ser		Ser	Ser	Ser	Ile		
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	Asn	Pro	Ser	Leu		Phe	Asn	Tyr	Asn		Phe	Gln	Phe	ГÀЗ			
136		_	_	_	165	~ 1	_		~	170	7.3	a	a	C1	175		
	Thr	Asp	Ser		GIU	GLu	Pro	Asn	Cys	Thr	АТА	ser	Ser		мет	Thr	
138	m1	7\	Ċ1	180	Cln	C1 5	C1.,	Cln	185	uic	Tvc	Tuc	Cln	190	ጥርም	Gly	
	Thr	Asp		GIU	GIII	GTII	GIU	200	Leu	UTS	пуз	пуз	205	GTII	тут	GIÀ	
140	Dwa	C02	195	C1 v	Gln	Δen	Tla		Leu	Glu	T. 🗕 17	Ser		Glv	Tle	Val	
141	PLO	210	ASII	GIY	GIII	АЗР	215	ASII	пец	Olu	шси	220	110	O _T y	110	VUL	
	Sar		Aen	Ser	Ser	Ara		Ser	Asn	Δla	Asn		Ala	Glu	Ser	Lvs	
	225	АТА	лэр	Der	JCI	230	VUL	JCI	71511	111.0	235	501	1114	014	001	240	
		Lvs	Val	Asp	Asn		Asn	Phe	Gln	Phe		Glu	Gln	Ala	Met		
146	110	цуо	var	Пор	245				02	250					255		
	Ala	Lvs	Ala	Val		Leu	Cvs	Trp	Gln		Gly	Phe	Gly	Thr	Ser	Glu	
148		2,0		260	-1-		- 1 -	L	265		_		_	270			
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			PHER			LION	GIII	MIDO									
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				gaa	qqc	tgt	tgg	cgt	tcc	ctc	ccc	aaa	gct	gca	ggt	ttg	206
178	Ile	His	Ğĺy	Ğlu	Ğĺy	Cys	Trp	Arg	Ser	Leu	Pro	Lys	Ala	Ala	Gly	Leu	
	30		_		-	35					40					45	
181	cac	cgt	tgc	ggt	aaa	agt	tgc	agg	ctg	aga	tgg	ata	aat	tac	tta	aga	254
182	His	Arg	Cys	Gly	Lys	Ser	Cys	Arg	Leu	Arg	Trp	Ile	Asn	Tyr		Arg	
183					50					55					60		
185	cca	gat	atc	aaa	cgt	ggt	aac	ttt	gct	caa	gac	gaa	gag	gac	tta	att	302
	Pro	Asp	Ile		Arg	Gly	Asn	Phe	Ala	Gln	Asp	Glu	Glu		Leu	TTE	
187				65					70			·		75	~	~~+	350
189	atc	aaa	ctc	cat	gct	ctc	CTT	ggt	aac	cgg	Lgg	LCa	cig	ald	yer	ggı	220



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190 11e Lys Leu His Ala Leu Leu Gly Asn Arg Trp Ser Leu Ile Ala Gly 191 80 85 90 193 aga tta cca gga aga aca gat aat gaa gtg aag aca tat tgg aat tcc 194 Arg Leu Pro Gly Arg Thr Asp Asn Glu Val Lys Asn Tyr Trp Asn Ser 195 95 100 105 197 cat ata aag aga aag cta atg aag atg ggg atc gat cct aat aac cat 198 His Ile Lys Arg Lys Leu Met Lys Met Gly Ile Asp Pro Asn Asn His 199 110 115 120 125 201 aag ttg aac caa tat cct cat cat gtt ggt ccc ctt aac ccc acc acc 202 Lys Leu Asn Gln Tyr Pro His His Val Gly Pro Leu Asn Pro Thr Thr 203 130 135 140 205 acc aac tcc atg gat gtg gca tgt aag ctt aga gtg tgt tca aca gac 206 Thr Asn Ser Met Asp Val Ala Cys Lys Leu Arg Val Cys Ser Thr Asp 207 145 150 150 209 aat gat gat ggg atc tca gat gct gca agt tat ctc gaa gac gca aca 210 Asn Asp Asp Gly Ile Ser Asp Ala Ala Ser Tyr Leu Glu Asp Ala Thr 211 160 165 170 213 ccg ccc act ggt ata tcc aac ttg gac ctt gat ctc aca att gct ttf 214 Pro Pro Thr Gly Ile Ser Asn Leu Asp Leu Asp Leu Thr Ile Ala Phe 215 175 180 185 217 cct tcg agt cct atc aag aat att att gaa gaa gac cag cag aaa aca 218 Pro Ser Ser Pro Ile Lys Asn Ile Ile Glu Glu Ser Gln Gln Lys Thr 219 190 205 221 gca tct att gta aca aat gat ga gaa ga gaa caa tat aca gtc cct acc 222 Ala Ser Ile Val Thr Asn Asp Glu Glu Glu Gln Tyr Thr Val Pro Tr 223 210 225 225 ctt ctt ctt ttc aga tga gacaaaaaaa aaagcctcac acatgtggag 236 gattattct gtataaattt ggtagaaaga aagattcaa cttaagaatt aggtaaaact 237 gattattctt gtataaattt ggtagaaaga aagatttcaa cttaagaatt aggtaaaaca 238 gattattctt gtataaattt ggtagaaaga aagatttcaa cttaagaatt aggtaaaaca 239 gattattctt gtataaattt gtagaaaga aagatttcaa cttaagaatt aggtaaaaca 230 gattatattct gtataaactt tcgtttgta tgcgtaaaaga tattctcaa tgtagagtca 1142 241 gctaaaaaa 242 (212 NEE) RT 247 <212 NEE ID NO: 4 245 <211 LENGTH: 226 246 <212 NEE ID NO: 4 245 <211 LENGTH: 226 246 <212 NEE ID NO: 4
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110
202 Lys Leu Asn Gln Tyr Pro His His Val Gly Pro Leu Asn Pro Thr Thr 203 140 135 140 140 140 140 140 205 acc act atg gtg gtg dtg tca agg gtg tgt tca aca gac 542 206 Thr Asn Ser Met Asp Val Ala Cvs Ser Thr Asp Asp Asp Asp Asp Asp Asp Asp Ala Ala Ser Tyr Leu Glu Asp Ala Thr Asp Ala Ala Ser Tyr Leu Glu Asp Ala Ala Ser Tyr Leu Glu Asp Ala Ala Ser Tyr Leu Glu Ala Ala Ser Tyr Leu Ala Ala Ala S
203
205 acc aac tcc atg gat gtg gca tgt aag ctt aga gtg tgt tca aca gac 206 Thr Asn Ser Met Asp Val Ala Cys Lys Leu Arg Val Cys Ser Thr Asp 207 145 150 155 209 aat gat gag gat ctca gat gct gca agt tat ctc gaa gac gca aca 210 Asn Asp Asp Gly Ile Ser Asp Ala Ala Ser Tyr Leu Glu Asp Ala Thr 211 160 165 170 213 ccg ccc act ggt ata tcc aca ttg gac ctt gat ctc aca att gct ttt 638 214 Pro Pro Thr Gly Ile Ser Asn Leu Asp Leu Asp Leu Thr Ile Ala Phe 215 175 180 185 217 cct tcg agt cct atc aag act att att gaa gaa agc cag cag aaa aca 218 Pro Ser Ser Pro Ile Lys Asn Ile Ile Glu Glu Ser Gln Gln Lys Thr 219 190 195 200 205 221 gca tct att gta aca aat gat gaa gaa gaa caa tat aca gtc cct acc 222 Ala Ser Ile Val Thr Asn Asp Glu Glu Glu Gln Tyr Thr Val Pro Thr 223 210 215 220 225 ctt ctt ctt tct aga tga gacaaaaaaa aaagcctcac acatgtggag 782 226 Leu Leu Leu Phe Arg 227 225 229 attcgtgcaa aagacctaaa ggcttacgaa ggcaacatgc acgccattgt caaattcttt 842 231 tggatgatgg attgaaacca tatccttgtc cattagaaag gaggaagata agctaaaact 902 233 gtattattg gtataaacta tggatgaagaa attgatagaa gagttcaac acttactgg 102 235 aactgaatga atgaacgaat tgcagataag ttgttaggag gtttcaatc aacttatctg 1022 237 caattaattt ggtagagctg atgtagaaga atgatgaaga tatgatgaaca tatccttg 1022 239 gatatttcag gctctaattg tctgttgta tgcgtaaaga tatcttcaa tgtagatca 1142 241 gctaaaaaa
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207
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225 ctt ctt ctt ttc aga tga gacaaaaaaa aaagcctcac acatgtggag 782 226 Leu Leu Leu Phe Arg 227 225 229 attcgtgcaa aagacctaaa ggcttacgaa ggcaacatgc acgccattgt caaattcttt 842 231 tggatgatgg attgaaacca tatccttgtc cattagaaag gaggaagata agctaaaact 902 233 gtattattgt gtataaattt ggtagaaaga aagatttcaa cttaagaatt aggatcaaat 962 235 aactgaatga atgaacgaat tgcagataag ttgttaggag gttttcaatc aacttatctg 1022 237 caattaattt ggtggagctg atgtaggatg atgagttcat cgtacatgaa ctgaaccttt 1082 239 gatattcag gctctaattg tctgtttgta tgcgtaaaga tattcttcaa tgtgagatca 1142 241 gctaaaaaa 1151 244 <210> SEQ ID NO: 4 245 <211> LENGTH: 226 246 <212> TYPE: PRT
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256 Gly Lys Ser Cys Arg Leu Arg Trp Ile Asn Tyr Leu Arg Pro Asp Ile
257 50 55 60

RAW SEQUENCE LISTING

DATE: 07/25/2001 PATENT APPLICATION: US/09/453,387A TIME: 15:26:46

Input Set : A:\Uco-956.app

Output Set: N:\CRF3\07252001\I453387A.raw

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262 Gly Arg Thr Asp Asn Glu Val Lys Asn Tyr Trp Asn Ser His Ile Lys
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264 Arg Lys Leu Met Lys Met Gly Ile Asp Pro Asn Asn His Lys Leu Asn
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266 Gln Tyr Pro His His Val Gly Pro Leu Asn Pro Thr Thr Asn Ser
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268 Met Asp Val Ala Cys Lys Leu Arg Val Cys Ser Thr Asp Asn Asp Asp
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270 Gly Ile Ser Asp Ala Ala Ser Tyr Leu Glu Asp Ala Thr Pro Pro Thr
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272 Gly Ile Ser Asn Leu Asp Leu Asp Leu Thr Ile Ala Phe Pro Ser Ser
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274 Pro Ile Lys Asn Ile Ile Glu Glu Ser Gln Gln Lys Thr Ala Ser Ile
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300 gaa ggc ctt aac aga gga gct tgg act gct ctt gaa gac aaa att ctt
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301 Glu Gly Leu Asn Arg Gly Ala Trp Thr Ala Leu Glu Asp Lys Ile Leu
304 aaa gat tat atc aaa gta cac ggt gaa ggt cgt tgg aga aat ctc ccc
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305 Lys Asp Tyr Ile Lys Val His Gly Glu Gly Arg Trp Arg Asn Leu Pro
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308 aaa aga gct ggt ctt aag aga tgt ggg aaa agt tgt agg ctt cgg tgg
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309 Lys Arg Ala Gly Leu Lys Arg Cys Gly Lys Ser Cys Arg Leu Arg Trp
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312 ttg aat tat ttg aga cct gat att aaa aga ggt aac ata tca cct gac
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313 Leu Asn Tyr Leu Arg Pro Asp Ile Lys Arg Gly Asn Ile Ser Pro Asp
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316 gag gaa gag ctt atc atc aaa ctc cac aaa ctc ttg gga aac aga tgg
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317 Glu Glu Glu Leu Ile Ile Lys Leu His Lys Leu Leu Gly Asn Arg Trp
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Use of n and/or Xaa has been detected in the Sequence Listing. Review the Sequence Listing to insure a corresponding explanation is presented in the <220> to <223> fields of each sequence using n or Xaa.

VERIFICATION SUMMARY

PATENT APPLICATION: US/09/453,387A

DATE: 07/25/2001 TIME: 15:26:47

Input Set : A:\Uco-956.app

Output Set: N:\CRF3\07252001\I453387A.raw

 $L:104~\mathrm{M}:336~\mathrm{W}:$ Invalid Amino Acid Number in Coding Region, SEQ ID:1

L:447 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:7

L:575 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:9

L:593 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:10 L:798 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:25

L:827 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:26